

focus on *Fish & Wildlife*

Wild turkey hunting season forecast ***Biologist predicts another record turkey harvest***

DNR wild turkey biologist Steve Backs predicts hunters will harvest about 8,300 turkeys this spring. He expects the proportion of 2-year-old birds to increase due to good reproduction in 1999. Two-year-old gobblers are generally the most active gobblers and tend to be more receptive to calling. Backs' predictions are based on historic trends, brood production and harvest data.

There are no turkey hunting regulation changes this year and the hunting range will remain the same as in 2000.

This year's season begins on Wednesday, April 25 and runs through Sunday, May 13. Last year's harvest of more than 7,800 birds was the 18th consecutive season of increased harvests. Hunters harvested wild turkeys in 72 of the 74 counties open to hunting during the 19-day season.



In 2000, hunters harvested 7,822 wild turkeys in 72 of the 74 counties open to hunting. The harvest this year is predicted to be more than 8,300 birds.

Top 10 counties for birds harvested in 2000

- | | |
|----------------------|---------------------|
| 1. 476 - Switzerland | 6. 320 - Parke |
| 2. 370 - Jefferson | 7. 277 - Crawford |
| 3. 349 - Perry | 8. 275 - Ripley |
| 4. 337 - Dearborn | 9. 257 - Washington |
| 5. 327 - Orange | 10. 255 - Harrison |

2000 wild turkey brood production

The size of wild turkey broods was smaller last summer. Brood production decreased to 3.1 poults per hen, which was fewer than the 4.2 poults per hen recorded in 1999. The decrease may reflect a higher proportion of juvenile hens in the breeding population resulting from good production in 1999, and a general maturation of the statewide population.

Despite smaller broods, the overall state turkey population continues to increase. Poult survival in Indiana appears to be directly related to weather conditions between normal peak hatch time in late May to early July.

Steven E. Backs, wild turkey biologist, Division of Fish and Wildlife

Topics this issue...

Eurasian collared dove

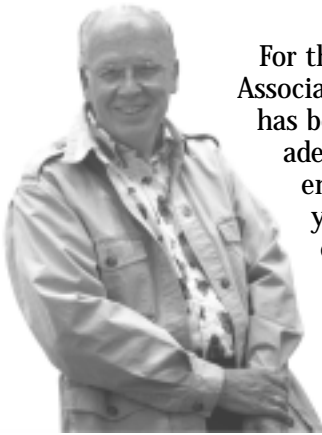
Wild turkey genetics

Private lands initiative

The mushroom classroom

Director of *Fish & Wildlife*

President signs wildlife funding bills



For the last several years, the International Association of Fish and Wildlife Agencies' top priority has been to build a structure of reliable and adequate federal funding for state nongame and endangered wildlife species conservation. Last year, we laid the foundation. When Congress concluded business on Dec. 15, 2000, it had completed work on two bills that contain funding for state wildlife conservation. The main difference between the two bills is how they are administered.

The Department of Interior appropriations bill (DOI) provides \$50 million through the U. S. Fish and Wildlife Service for state wildlife grants. The DOI bill specifies that funds be distributed to the states on a competitive basis and that the U. S. Fish and Wildlife Service leverage the federal funds to the greatest extent possible. Since the new executive branch administration must be in place before a process is developed for the distribution of the funds, this may take some time.

The Commerce, Justice and State Appropriations bill (CJS) amends the Pittman-Robertson Act of 1937 to include a new subaccount for "Wildlife Conservation and Restoration." The \$50 million is to be allocated to state fish and wildlife agencies based on each state's size and population. This scaled-down version of CARA (Conservation and Reinvestment Act) is funded for only one year and requires states to put up a 25 percent match. Indiana is eligible for nearly \$1 million of CJS money.

Because many of the details of the DOI funds are still unknown, the Indiana Division of Fish and Wildlife will concentrate on CJS funds that will be available in early 2001. Using input from the Teaming With Wildlife (TWW) Coalition, our staff, and some suggestions from the national TWW steering committee, priorities for this one-year funding are being developed for the protection of wildlife, conservation education and wildlife-related recreation.

The Indiana Nongame and Endangered Species Program currently exists through contributions from tax payers. The program receives no state or federal funds, yet it accomplished the successful restoration of the bald eagle, river otters, and peregrine falcons in Indiana and discovered the presence of the endangered lake sturgeon in Indiana waters. To view the annual report for the program see: www.state.in.us/dnr/fishwild/nongame/anl.html

Much more remains to be done for the more than 550 nongame species and 85 state endangered species in Indiana. The DOI and CJS bills are a good first step. Now the TWW coalition intends to go to the 107th Congress for a more permanent source of funds with the already high profile CARA bill. Stay tuned and watch for news about our plans in the coming year.

Gary Doxtater

Mission

To manage fish and wildlife for present and future generations, balancing ecological, recreational and economic benefits.



Focus on Fish & Wildlife is a quarterly publication from the Indiana Department of Natural Resources Division of Fish and Wildlife. *Focus on Fish & Wildlife* seeks to educate sportsmen and women, conservationists, wildlife recreationists and all Hoosiers on topics related to the management of Indiana's fish and wildlife resources.

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focus on *The Eurasian collared dove*

Exotic dove almost ducked detection by determined birders

Like the calm before a storm, we are at the forefront of something brewing. A new bird has arrived in Indiana, and given its history, it will likely show up in your neighborhood. The species is Eurasian collared dove (*Streptopelia decaocto*).

A native of Asia, the Eurasian collared dove has aptly shown its ability to spread its wings well beyond its natural range. It swept across Europe beginning around 1930 and hasn't looked back. Eurasian collared doves were first reported in North America in Florida in the 1980s, after having spread from the Bahamas where they had escaped captivity. The species has since expanded its range northward and has been reported in about half the states including several in the Midwest.

In 1999, there were at least four separate reports of Eurasian collared doves in Indiana, although only one of these was well documented. This report came from the town of Brook in northwest Indiana's Newton County. In September of 2000, six birds believed to be Eurasian collared doves were found in a neighborhood in Lebanon in Boone County. Neighbors say the birds have been present for at least three years (more information and photos can be found at: www.wbu.com/chipperwoods/index.htm).



The Eurasian collared dove has a black band or "collar" on the nape of the neck. A white border can generally be seen surrounding the black collar. Eurasian collared doves are much paler and chunkier than native mourning doves.

Identification is challenging

The Eurasian collared dove can be a challenge to identify even by the most astute birders. They closely resemble the ringed turtle dove (*Streptopelia risoria*), a domesticated dove and common cage bird that sometimes escapes captivity. Add to this confusion the fact that the two are capable of interbreeding and producing hybrids.

The Eurasian collared dove and the ringed turtle dove both sport a black collar on the back of the neck and have more squared-off tails than our native mourning dove. Eurasian collared doves are noticeably larger and chunkier than either the ringed turtle dove or mourning dove. The plumage of the Eurasian collared dove is pale grayish-brown and the primary feathers are darker than the rest of the wing.

Perhaps the best physical characteristic to note in separating the Eurasian collared dove from the ringed turtle dove is the color of what is known as the undertail coverts. These are small feathers that extend down from the belly region onto the underneath side of the tail in a "V" pattern. The undertail coverts are gray on Eurasian collared doves, but white on ringed turtle doves. Voice is believed to be the surest way for birders to identify Eurasian collared doves. Their three-part call, a soft koo-koooo-kook is distinctive from both ringed turtle dove and mourning dove. Eurasian collared doves also frequently give a harsh squawk or cry when being flushed or upon landing on a perch.

Like mourning doves, Eurasian collared doves take advantage of available seed at birdfeeders and grain storage areas. Although they obviously can be found in town, as their numbers grow, Eurasian collared doves may populate rural agricultural areas.



Undertail colors are black and white. The black often reaches the tip of the gray "V-shaped" undertail covert feathers. The black extends in a thin line down on to the outermost tail feathers.

Future impact

Should we be concerned? Eurasian collared doves have spread quickly. It's difficult to speculate how they could potentially affect our native mourning dove or perhaps other species. Non-native species often compete with native species for food and nesting sites. Exotics may also carry diseases that adversely affect native species. It is simply too early to tell what impact, if any, Eurasian collared doves may have on mourning doves or other birds. All we can do is track their spread and monitor their impacts on other species. At any rate, it appears that Eurasian collared doves are here to stay.

Roger Hedge, heritage ecologist, Division of Nature Preserves

Older field guides do not illustrate the Eurasian collared dove. New guides that include this species are:

- *The National Audubon Society Sibley Guide to Birds* by David Sibley
- *Focus Guide to the Birds of North America* by Kenn Kaufman
- *National Geographic Society Field Guide to the Birds of North America* by Jon Dunn

focus on *Wild turkey status in Indiana*



Where we have been and where we are going in the future

The ritual

As the daylight lengthens and the winter storms yield to the warmer winds of spring, wild turkeys and other birds begin their breeding season rituals. The wild turkey breeding season not only signals the coming of warmer days, but also of another spring ritual enjoyed by a growing number of Hoosier hunters. The 2001 wild turkey hunt begins.

Restoration of the wild turkey

Indiana's wild turkey restoration program began in 1956 and the major objectives of the restoration program were completed in 1999. A total of 2,639 wild turkeys were trapped and released at 176 sites through the state. Wild turkeys now exist in 81 of 92 counties in Indiana. Since 1998, 74 counties have been opened to spring wild turkey hunting.

1999 questionnaire results

Hunter effort and success data were collected through 5,500 post season, mail-in questionnaires and mandatory check stations. In 1999, the overall estimated success rate for 27,285 hunters was 24 percent.

Private lands continue to support 71 percent of the total hunter effort.

Huntible private lands within the hunting range continue to increase.

2000 check station results

The 31st wild turkey hunt was held April 26 to May 14, 2000 and biological data was collected at 277 check stations throughout the turkey range. Hunters harvested 7,822 wild turkeys in 72 of the 74 counties open to hunting during the 19-day season. This was the 18th consecutive year of increased harvest—a 19 percent increase over last year's harvest. Fifty-three percent of the harvest occurred during the first five days of the season with 38 percent occurring on the three weekends.

One-year-old birds, "jakes," made up 27 percent of the harvest; two year olds made up 44 percent; and three year olds made up 28 percent of the harvest.

Jakes averaged 15.2 pounds while the average two-year-old weighed 20.7 pounds. Three year olds and over, weighed 21.9 pounds.

Harvest summaries

Data from the 1999 questionnaires and the 2000 check station analysis were incorporated into a summary of Indiana's wild turkey hunting

seasons. Projections for 2000 and 2001 were estimated from trend lines for the previous five years. An estimated 27,500 hunters participated in 2000 season and the hunter success was projected at 28 percent. In 1997, there was a 58 percent increase in the amount of available hunting range. The new areas opened to hunting were primarily in agricultural land. The amount of forest cover in the hunting range dropped from 32 percent in 1996 to 24 percent.

Hunter success

As the harvests of wild turkeys has increased, a parallel growth pattern in hunter numbers has also occurred. The trends in harvests and hunter numbers are generally related to the amount of hunting range that has increased due to restoration efforts throughout the state.

Hunter success has been around 22 percent since 1987. The amount of hunter effort expended to harvest a turkey has remained close to 20 efforts per bird harvested since 1985.

Harvest variables have been influenced to some degree by the poor summer production (1995-98) and countered by increases in the available hunting range.

Turkey populations are still growing in most areas. Increases in the available hunting range have absorbed increases in hunter numbers with no radical changes in hunter success and effort per bird harvested. The overall indication is a gradual maturation or leveling off of the statewide turkey population growth following restoration, especially in the more traditional range where the restoration effort was initiated.



Wild turkey hunter, Jon Marshall, has honed his calls and pre-scouted the area. Now, it's time to play the waiting game.

Steven E. Backs, wild turkey biologist, Division of Fish and Wildlife

focus on *Turkey hunting a journey to an experience*

The joy of turkey hunting is in the journey, not the destination

I've always had an avid interest in wildlife, even though I grew up in a suburban environment. I hoped that someday I could learn more about recreational outdoor activities, such as hunting.

After graduating from Purdue University, I attended the graduate program at South Dakota State University. My goal was to obtain a graduate degree in wildlife science.

While attending college in South Dakota, I enrolled in the *Becoming an Outdoors Woman* program. One of the classes I attended was on turkey hunting. After completing the class, I was hooked.

After more than four years in South Dakota, I came back home to Indiana where I met some friends that were willing show me the turkey hunting ropes.

Having just completed the final requirements for my graduate degree, I made plans with my friend, De, to go hunting at Minnehaha Fish and Wildlife Area. The turkey hunt was sort of a graduation present to myself. After we checked in at the Minnehaha office, we proceeded to our hunting site.

De told me to sit in front of a large tree for safety. I would also have

something to lean against while she tried to call in a wild turkey. I got comfortable and surveyed my surroundings. In front of me were saplings and some low, shrubby vegetation. I sat there as still as I could while De used a slate call to see if she could attract a turkey. We sat in our position for two hours. The adrenaline was still coursing throughout my body, and I was at-the-ready.

After more than three hours of being ready, the adrenaline was wearing off. I was also trying to ignore the hungry hoards of pesky mosquitos that had selected me as their own quarry.

At 8 a.m. De said, "let's try another location." Just as we were getting up, De loudly whispered to me, "Beth, look hard right." There, maybe 15 yards away, was a wild turkey strutting around like he hadn't a care in the world. The adrenaline rush came back in a flash. My pulse raced and I could feel my heart pounding in my ears. I had never been this close to a wild turkey in the field before. I was awe-struck at the sight of him. He was spectacular.

There was just one problem. I was sitting in the opposite direction of

the turkey. If I turned too quickly my motion could scare him into the brushy vegetation nearby. Slowly, I began to reposition myself and my gun for a good shot. Being a novice, I made too much noise. The turkey stopped, turned and looked directly at me, then strutted away into the brush. I was so excited at seeing the turkey that De had to remind me to breathe again.

The sun was now overhead, making the air warm. The wind had picked up, and conditions were no longer as favorable for turkey hunting.

We walked around other areas close to where I first saw the turkey. We stopped a couple of times to use the slate call, but with no response. We reluctantly called it a day and drove back home.

Some turkey hunters might think our hunt was a failure. I think it was a big success. No, I didn't bag my first wild turkey, but in my mind, just seeing the turkey up close, in its natural habitat, and hunting with a good friend was all that I could have asked.

Beth Hippensteel, assistant property manager,
Greene-Sullivan State Forest



The 8,300-acre Minnehaha Fish and Wildlife Area is located near Sullivan, Ind. Recreational opportunities include: fishing for bluegill, catfish, crappie and bass; hunting for deer, upland game, dove, squirrel, waterfowl and turkey. Pre-registration is required for the opening days of turkey season. The property also has picnicking facilities and a hiking trail. For more information about Minnehaha Fish and Wildlife Area, call (812) 268-5640.

focus on *Wild turkey genetics*

If you think getting blood out of a turnip is difficult, try getting blood out of a turkey.



Hunters on state wildlife management areas over the past few years have become used to the phrase "Excuse me, but could we take blood from your turkey?" If you have experienced this request, you have likely participated in one of the largest wild turkey genetics projects in the world today.

The Indiana DNR Division of Fish and Wildlife and researchers from Purdue University are collaborating to obtain a comprehensive sample of wild turkey DNA from a number of selected locations in the state. With the help of wild turkey hunters, this collaborative effort toward sample acquisition across the state has been an overwhelming success, and, in a few more years, sampling will be complete. Using these samples, Dr. Gene Rhodes and Ph.D. student Emily Latch are currently evaluating genetic diversity in reintroduced populations of turkeys in Indiana. By doing so, they hope to increase the long-term viability of turkeys in the state.

Turkey restoration programs

Throughout the United States, wild turkey restoration programs have successfully translocated thousands of birds. As these reintroduction programs reach their conclusion, questions arise regarding the sustainability of these populations. Despite diverse stocking strategies, a common theme of most restocking programs is that, in most states, the vast majority of relocated birds came

from only a few source populations. Furthermore, these source populations may have originated from only a few individuals. Populations founded by individuals from a common gene pool can suffer losses in genetic diversity.

Genetic diversity

Losses in genetic diversity can lead to a number of problems including loss of adaptability and a higher probability of local population crashes. By the time populations visibly show the effects of genetic loss, it may be too late to correct the problem. Thus, we must evaluate the current genetic diversity present in wild turkey populations in order to predict their future viability, and to develop optimal strategies for future wild turkey reintroductions.

Turkey restoration in Indiana

The Indiana wild turkey population provides an exceptional opportunity to examine potential problems stemming from losses in genetic diversity. The wild turkey restoration in the state has been extremely successful, relocating more than 2,600 birds in 176 releases over the last 45 years. The DNR has utilized a multitude of different stocking strategies over the course of its restoration efforts. In general, individuals were taken from different areas in an attempt to maximize genetic diversity in relocated populations. However, some translocations used reintroduced birds from previous release sites for later reintroductions. Although used commonly throughout the United States, this leap-frog style of



Wild turkey restoration in Indiana has been very successful, relocating 2,639 birds in 176 releases over the past 45 years. The Division of Fish and Wildlife has used several different stocking strategies over the course of the

restoration efforts. In an attempt to maximize genetic diversity, birds now found in 81 of 92 In

od out of a wild turkey

reintroduction may accelerate the loss of genetic diversity.

Turkey tracking - DNA style

Interestingly, the diversity of translocation strategies and the sheer magnitude of the reintroduction effort make Indiana a particularly good study area. In addition, the DNR has been meticulous in its documentation of each turkey used in the program, providing researchers with the background information essential to the study. In several instances, blood and tissue samples were taken before the birds were released. Currently, the DNR is assisting in the collection of additional blood, tissue, and feather samples for the project through hunter check stations, ensuring efficiency and comprehensiveness.



neral, individuals were taken from different areas in an etic diversity in relocated populations. Wild turkeys are ndiana counties.

We are currently in the initial phase of our project, developing cost-effective methods for performing large-scale surveys of genetic variation in the wild turkey. These surveys will use DNA-based technologies, which allow us to quantify genetic variation among individuals and populations. We are focusing on DNA-based surveys for several reasons, including ease of data collection, the need for very small amounts of sample from an individual, and the ability to collect large amounts of data from each individual.

DNA technology

The use of DNA-based technologies enables us to detect small-scale genetic differences between individuals and to identify reductions in genetic diversity before they become insurmountable. Surveys of genetic diversity within and among reintroduced flocks of wild turkeys throughout Indiana will allow us to identify wild turkey populations that may have lost genetic diversity, and to prescribe supplements of genetic stock to populations before their viability is affected. In addition, DNA technologies allow us to examine the amount of interaction between flocks in localized areas (such as state wildlife management areas), and to predict the potential genetic problems these flocks may be expected to experience.

With these types of data, we will gain a better understanding of the complex genetic effects associated with reintroductions, and can employ appropriate management strategies to ensure the long-term success of wild turkey populations in Indiana.

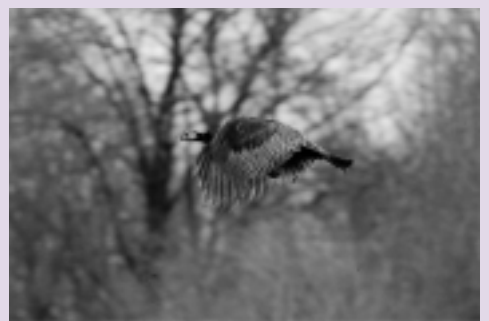
Emily K. Latch and Dr. Olin E. Rhodes, Jr.,
Purdue University



The research team is experienced and very conscientious about doing the job right. The goal is to take a DNA sample with minimal handling stress to the birds.



The use of DNA-based technologies enables Purdue researchers to detect even minute genetic differences between individuals and to identify reductions in genetic diversity before they become unmanageable.



Thanks to the DNA-based information being gathered by researchers, appropriate management strategies can be used to ensure the long-term success of the wild turkey in Indiana.

focus on

Planting and maintaining filter strips

Protecting water quality and providing habitat for wildlife

With every springtime rainstorm, surface run-off moves down the slope, collecting soil particles and debris along the way and ends up in some type of water course. If not protected, the quality of the water course can be adversely affected.

When surface water flows over unprotected soil, it can cut rills and gullies and carry off precious topsoil. Soil is then carried into streams, ponds and lakes and muddies the water and covers the bottom of the stream, pond or lake. This can reduce fish habitat. It also reduces the amount of water a stream, pond or lake can store and thus decreases the water supply storage for your town.

One effective and economical way to protect a water course is to plant and maintain filter strips along ditches, streams, ponds and lakes. Besides water-quality-protecting benefits, filter strips also serve as excellent habitat for wildlife.

The most natural and best filter material is grass. A strip of good grass cover will help filter out most soil

particles, plus some of the nutrients that are either suspended in the water or attached to soil particles. Although any width of filter strip will help, the wider the filter strip, the better the filtering effect. If not mowed, a grass filter strip provides good nesting and escape cover for many ground-nesting birds and mammals.

Biologists recommend that native grasses be used whenever possible, since they are more adapted to a given site. Top choices for most areas of Indiana are: big bluestem, little bluestem, Indian grass, switchgrass, and side oats gramma. All of them are beautiful when mature, easy to manage, and maintained simply by burning.

When considering water quality protection practices, think native grass filter strips. They're effective, economical, maintainable, attractive, and beneficial to fish and wildlife.

Mark Bennett, district biologist, Division of Fish and Wildlife



The use of filter strips along this creek is an effective way to keep sediment and nutrients from entering the waterway after a rainstorm.



A filter strip of natural vegetation around this water area has effectively filtered out the sediment that can destroy good fish habitat.



This farm pond is encircled by grass and other vegetation that will intercept and help trap sediment, organics, pesticides and other pollutants before they can enter the pond.



Bobwhite quail use vegetation planted for filter strips as escape cover and a source for food.

focus on ***Making a difference on private land***

Wildlife biologists can develop a wildlife plan for your land

If you own property and have an interest in improving wildlife habitat on your land, give your local district wildlife biologist a call.

The primary focus for Indiana's 22 district wildlife biologists is to enhance wildlife habitat on private lands. With more than 97 percent of Hoosier lands in private ownership, the opportunities to make wildlife habitat improvements are almost limitless.

Each biologist covers a specific region ranging from one to six counties in size. A directory of district biologists is available in the Indiana Hunting and Trapping Guide or at: www.state.in.us/dnr/fishwild/. The guides are available at most DNR properties and where hunting and fishing licenses are sold.

Make an appointment with a district biologist to meet with you to look over your land. During the visit, the biologist will scrutinize the existing wildlife habitat and discuss various management practices that could be implemented to improve the tract for desirable wildlife species.

Management practices provide wildlife with habitat. Wildlife habitat consists of food, cover, water and space. The quality and quantity of wildlife habitat and how these are arranged on your property will dictate the abundance and variety of critters on your land.

Examples of habitat improvement projects might include: grassland establishment or enhancement, food plots, tree or shrub planting, wetland development, artificial home construction, strip disking, control burning, selective cutting, woodland openings, edge development, and clear cutting.

A Wildlife Habitat Improvement Plan or WHIP can be developed for the landowner by the district wildlife biologist. A WHIP is map for wildlife habitat management techniques. The

plan may also discuss future projects or habitat maintenance needs.

Landowners may qualify for financial assistance or cost share monies to implement these practices.

A wide assortment of funding is available from various governmental agencies, such as the Division of Fish and Wildlife, U.S. Fish and Wildlife Service and the Natural Resource Conservation Service (Farm Service Agency). Other not-for-profit

conservation organizations such as Quail Unlimited, Pheasants Forever and the National Wild Turkey Federation may also assist private landowners by providing equipment, seed, and financial backing.

Call your district wildlife biologist and see how you can make a difference for wildlife on your land.

Roger Stonebraker, district biologist, Division of Fish and Wildlife



Wildlife habitat consists of food, cover, water and space. Wildlife biologist Rick Percy examines the seed mixture in a warm season grass drill. DNR biologists are establishing native warm season grasses with forbs back into the Indiana landscape to provide food for wildlife.

focus on *A cold-blooded predator with “warts”*

Toads are the tiny tigers of their terrestrial territory

Cutworm killer

Toads are cold-blooded predators. While they may look short, squat, slow, and generally unworthy of our attention, they stalk, capture and eat unwanted yard and garden pests. Their tongues dart out to catch flying insects faster than our eyes can follow. One of their favorite meals is the cutworm—a known garden demolition expert.

Toads also can add song to your backyard world. Toads and frogs have a different song to communicate within their species—just like birds do. Go outside on a warm, spring or summer night and listen. That’s when you will hear toads singing a high-pitched, monotone trill to delineate their territories and attract mates.

Indiana has three species of toads: Fowler’s, Eastern spadefoot and American. The American toad (*Bufo americanus*) is one of the most common amphibians found throughout Indiana and the United States. American toads breed in ponds

and wetlands in the spring and lay strings of eggs in the water. After hatching, the newborns spend a few weeks as tadpoles, then emerge from the water. Adult toads spend most of their life away from water, and are most active at dusk and on drizzly days. Take a walk at dusk to do a toad inventory—you might be surprised to find that toads reside in your backyard.

Toad abodes

Ponds and natural wet areas attract toads. If you don’t have a natural wet area, you can create one with a pie plate or similarly-sized dish filled with water placed in a shady spot. Toads seek dim, moist spots during the day. Something as simple as a broken clay pot, placed on its side like a cave, works well for a toad shelter. Or, you can build a toad abode from piled bricks, rocks, or scraps of wood. Garden centers offer attractive toad homes if you want something more stylish for your

amphibian guests. You may want to create a small pond or wetland in your backyard. A small pond or wetland area will also attract a variety of wildlife.

Toad tales

Toads cause warts is an old folk tale. The “bumps” you see on the skin of a toad may look “warty.” However, they’re not warts, and the big glands you see behind a toad’s eyes are not warts either. Touching a toad cannot give you warts—just as kissing a toad or a frog cannot turn it into a prince. Toad glands secrete a toxin—a toad’s best defense against predators such as snakes, cats, and dogs. The toxin irritates the mouth of would-be diners and usually causes the predator to spit out the toad.

It’s about balance

Amphibians should always be considered when trying to maintain a natural balance in your backyard. Re-evaluate the chemical fertilizers and herbicides you use on your yard. Some amphibian deformities have been traced to over-exposure to chemicals.

In general, amphibians are also having a hard time surviving because of loss and degradation of their habitat. Toads can live for several years. One toadagenarian lived to the ripe old age of 31.

Given the right habitat, once they move into your neighborhood, toads are likely to stay. Support a toad—it may turn out to be a different kind of prince in your natural kingdom.

For more information, call the USDA Natural Resources Conservation Service at 1-888-526-3227, for a free, colorful Backyard Conservation booklet and tip sheets.

Michael Ellis, program director, Division of Fish and Wildlife



The large bumps behind this Fowler's toad's eyes are parotoid glands, which contain a poison. The poison can irritate the mouth of any predators who try to eat these amphibians.

focus on *The mushroom classroom*

Building great memories with your children in the out-of-doors

Some of my most memorable moments as a child were fishing and hunting rabbits, squirrels and mushrooms with my dad. I remember him telling me to “go look around that tree,” and after he herded me back to the same tree several times, I finally found the mushroom he had spotted a half-hour earlier. Hey, that first one is the hardest to find.

Looking back, I’m not sure it was the mushrooming I enjoyed as much as the fact that I was spending time outside with my dad. If you have enjoyed those experiences with your parents, relatives or close friends, you know what I am talking about, and you also know the value of passing those experiences on to your youngsters.

I don’t consider myself an expert in mushroom hunting and have moderate success at best, but I don’t think there is anyone who enjoys it more. The only advice I want to give you is to make sure you first go hunting mushrooms with someone who can identify the ones that are safe to eat.

A quick search on the internet showed me how far behind I am in high-tech mushroom hunting. I found there is a National Morel Mushroom Hunters Association at www.morelmushroom.org with numerous links to other mushroom sites.

Why hunt mushrooms? Mushroom hunting is inexpensive. You don’t need a license or special equipment. Mushrooms are not only tasty, but are also high in the B complex vitamins. It’s fun just to be outside after a long winter doing something, anything, to get fresh air and exercise. Forget the problems and anxieties of the day, and just enjoy exploring the woods.

Have you ever noticed how children sometimes find more than we do? Sure, they are closer to the ground, but I also think they see more easily what they are looking for.



Sarah Maxwell of Indianapolis, Ind. shows morel mushrooms found behind her grandpa’s house. Mushroom hunting with kids exercises winter-weary limbs and minds. It’s a great time to teach kids their wildflowers and trees, watch bluegill build a nest underwater, or listen to spring peepers while searching for the delicious edibles.

Their minds are not cluttered with the day-to-day cares and problems we face. Well, at least that’s my excuse.

Hunting mushrooms helps us recharge our batteries, to spend time in a woods where we can appreciate and learn about our natural resources.

I support nature programs on television, but it seems we are raising a generation of kids who know more about the penguins in Antarctica and monkeys in the rainforest than they do about the trees, flowers, birds and bugs in their own back yards. If we don’t know what resources we have in our own woods, and along our streams, how can we appreciate what we have? If we don’t appreciate and respect what we have, then how can we expect people to care enough to manage, conserve, preserve or protect our natural heritage.

There was a time when youngsters knew their trees. I remember early on being able to identify an elm tree,

especially a dead one. It’s important when mushroom hunting to be able to identify those special trees where mushrooms are “supposed” to grow - elm, sycamore, tulip. It’s similar to hearing a squirrel cutting and trying to figure out which tree it’s in—hard to do if you don’t know your trees.

Let’s not let television give us our environmental fix. Instead, let’s head to the woods this spring, clear our minds, get some exercise, learn a few wildflowers and bird songs, watch some butterflies, and along the way pick up a few mushrooms to eat.

There is nothing quite as satisfying as building memories together with our children. Showing them the challenge of hunting mushrooms, and the pleasure and enjoyment of spending time together. What great memories for them and for you.

Mark Bennett, district biologist, Division of Fish and Wildlife

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